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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,394	01/10/2002	Gerrit Klaerner	SMX 3093.6 (2001-006R1)	4664
321	7590	01/12/2005	EXAMINER	
SENNIGER POWERS LEAVITT AND ROEDEL ONE METROPOLITAN SQUARE 16TH FLOOR ST LOUIS, MO 63102			CEPERLEY, MARY	
			ART UNIT	PAPER NUMBER
			1641	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/043,394	<b>Applicant(s)</b> KLAERNER ET AL.	
	<b>Examiner</b> Mary (Molly) E. Ceperley	<b>Art Unit</b> 1641	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-110 is/are pending in the application.
- 4a) Of the above claim(s) 1-48 and 70-101 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 49-69 and 102-110 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/19/02; 7/24/03; 4/11/07</u> | 6) <input type="checkbox"/> Other: _____  |

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**1)** For the Information Disclosure Statement filed April 11, 2002, the references numbered 36 - 54 have not been submitted in a format that the examiner can view online via "IFW Prior art". Upon receipt of the references in the appropriate format, the examiner will consider these references when establishing the next Office action and will provide applicants with the corresponding signed form PTO/SB/08A as an attachment to the next Office action.

It is noted that references 161 - 166 of the Information Disclosure Statement filed June 03, 2003 are duplicates of references 161 - 166 cited in the Information Disclosure Statement filed September 19, 2002.

**2)** Applicant's election without traverse of Group III, claims 49 - 69 and 102 - 110 in the reply filed on November 02, 2004 is acknowledged. Claims 1-48 and 70-101 are withdrawn from consideration as being drawn to non-elected inventions.

**3)** The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See the specification at page 14. See MPEP § 608.01.

**4)** Although specific claims are cited and discussed in the rejections below, these rejections are also applicable to all other claims in which the noted problems/language occur.

**5)** The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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**6)** Claims 49-69 and 102-110 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**a)** The use of the term "polymer brush" which is defined in the claims as comprising "a substrate surface", "a hydrophobic layer" and "a hydrophilic layer" appears to be inconsistent with the conventional terminology used in the art in which the "polymer brush" is a component which is attached to a "substrate" rather than containing the "substrate" as a component thereof. See for example, the abstract of Sidorenko et al (Langmuir (1999), 15, 8349-8355).

**b)** In claim 63, it is unclear what is meant by the term "the ratio of water-soluble or water-dispersible segments to a number of sites of attachment on the substrate surface being less than about 1:1".

**c)** In claim 69, there is no antecedent basis in claim 49 for the term "the intermediate segment" (used twice). It is also unclear what is meant by this term as well as the term "other polymer chains".

**7)** The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**8)** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**9)** Claims 49-69 and 102-110 are rejected under 35 U.S.C. 102(e)/103 as being anticipated by or obvious over Wagner et al (US 6,475,808).

In claims 1-3 Wagner et al describe a device comprised of a surface to which is attached a hydrophobic polymer layer on top of which a hydrophilic polymer is layered. A biomolecule may be attached to the hydrophilic polymer layer. This device anticipates the "polymer brush" of claim 65 which requires the same components as the device of the patent. For the claim 49 precursor to the "polymer brush" of claim 65 which contains "functional groups for the attachment of a probe for binding the molecule", see the functional group "Y" of Wagner et al at col. 16, line 50 – col. 17, line 25.

The features of the dependent claims are either inherent in the product of Wagner et al, are specifically described by Wagner et al or constitute obvious variations in parameters which are routinely modified in the art and which have not been described as critical to the practice of the invention. For example, for the "probe" defined as a "polypeptide" (claim 67) and "the molecule" defined as "a biological molecule", see Wagner et al, col. 10, lines 37-67; for the specific "functionalized groups" of claim 68, see Wagner et al, col. 17, lines 19-25; for the claim 56 "hydrophilic layer" which comprises "water-soluble or water-dispersible polymer chain segments", see claim 3 of Wagner et al. Although Wagner et al do not discuss the layer thickness and component ratio limitations of the instantly claimed compositions, these parameters are considered to be inherent in the Wagner et al compositions or to constitute obvious variations in parameters which are routinely optimized in the art.

**10)** Sidorenko et al (Langmuir (1999), 15, 8349-8355) is cited to further show the state of the art.

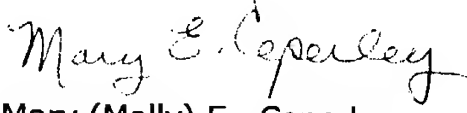
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**11)** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary (Molly) E. Ceperley whose telephone number is (571) 272-0813. The examiner can normally be reached from 8 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le, can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

January 07, 2005

  
Mary (Molly) E. Ceperley  
Primary Examiner  
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